



FEATURES

- ◆ SPI CONTROLLER for Digital-LED strip
- ◆ RGB, RGBW, and Tunable White (TW) Digital-LED strip light effects control
- ◆ Power supply (DC IN): 5-12-24 Vdc
- ◆ Output (OUT): voltage value equal to input voltage
- ◆ Local control (PUSH): via Normally Open (N.O.) Pushbutton
- ◆ Remote control: via Opto-Isolated DALI BUS (DALI) or via DMX512 (BUS)
- ◆ BUS Extender (BUS): possible to control other RUNNING-LIGHT-V2 via Master/Slave functionality or a second remote Digital-LED strip via PIXEL-REPEATER module
- ◆ Device configuration via Dalcnet LightApp mobile application, parameters can be set:
 - Integrated Circuit (IC) LED type
 - Colour Type and Pixel Number
 - Up to 10 dynamic effects
 - Effect colour, speed, direction, background and more
 - DALI parameters (Power-ON state, Fade, DALI Groups and Scenes, etc.)
- ◆ Suitable for use in Dry locations
- ◆ Extended temperature range
- ◆ 100% Functional test – 5 years warranty

PRODUCT DESCRIPTION

RUNNING-LIGHT-V2 is an SPI controller for pixel-to-pixel LED control on digital (programmable/addressable) LED strip, supplied by a constant voltage ($5 \div 24$) Vdc from an external SELV power supply. The controller is suitable for driving Digital-LED RGB/RGBW/TW strips at constant voltage. After the operating mode selection, device can be controlled locally via a Normally Open (N.O.) pushbutton or remotely, via DALI (Digital Addressable Lighting Interface) digital protocol or DMX512.

RUNNING-LIGHT-V2 can deliver a maximum output current of 7 A and has the following protections: over-voltage and under-voltage protections, reverse polarity protection and input fuse protection.

Through the BUS interface is possible to duplicate the effects to a second pixel-to-pixel Digital-LED strip placed at a distance up to 250 m from the controller by means of the PIXEL-REPEATER module (sold separately) or to synchronize the effects with other RUNNING-LIGHT-V2 devices configured in SYNC mode (Master/Slave system).

RUNNING-LIGHT-V2 enables you to make not only simple brightness adjustments but also more dynamic lighting control systems. This is made possible through the creation of multiple scenarios, animations, effects, timers, daylight controls, and more.

Through the Dalcnet LightApp mobile application and smartphones equipped with Near Field Communication (NFC) technology, it is possible to configure multiple parameters instantly (no reboot required), including up to 10 different light effects, colour, speed, direction, pixel length, and transition parameters. Dalcnet LightApp can be downloaded free of charge from the Apple APP Store and Google Play Store.

→ For the up-to-date manual, please consult our website www.dalcnet.com or scan the QR Code on product label.



PRODUCT CODE

CODE	POWER SUPPLY	LED OUTPUTS	N° of INTERFACES	REMOTE CONTROL	LOCAL CONTROL	APP CONFIG
RUNNING-LIGHT-V2	5-12-24 VDC	7 A (max) ¹	N°1 Digital-LED out N°1 BUS Extender (in/out)	DALI or DMX	N°1 N.O. Pushbutton	Dalcnet LightApp
PIXEL-REPEATER²	5-12-24-48 VDC	7 A (max) ¹	N°1 BUS Extender (in) N°1 Digital-LED out	BUS (up to 250 m)	-	-

Table 1: Product Code

PROTECTION AND DETECTION

The following table shows the types of incoming and outgoing protection/detection present on the device.

ACRONYM	DESCRIPTION	TERMINAL	PRESENT
IFP	Input Fuse Protection ³	DC IN	✓
OVP	Over Voltage Protection ³	DC IN	✓
UVP	Under Voltage Protection ³	DC IN	✓
RVP	Reverse Voltage Polarity ³	DC-IN	✓

Table 2: Detection and Protection functionalities

REFERENCE STANDARDS

RUNNING-LIGHT-V2 complies with the regulations shown in the table below.

STANDARD	TITLE
EN 55015	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547	Equipment for general lighting purposes – EMC immunity requirement
EN 61347-1	Lamp Controlgear – Part 1: General and safety requirement
EN 61347-2-13	Lamp controlgear - Part 2-13: Particular requirement for d.c. or a.c. supplied electronic Controlgear for LED modules

Table 3: Reference standards

¹ The maximum total output current depends on the operating conditions and ambient temperature of the system. For the correct configuration, check the maximum power that can be delivered in the §[Technical Specifications](#) and in the §[Thermal Characterization](#) sections.

² Optional BUS extender module sold separately.

³ Protections refer to the control logic of the board.

TECHNICAL SPECIFICATIONS

Description	Name	Values			Unit of Measure	Note
		Min	Typ	Max		
POWER SUPPLY (DC IN terminal)						
Nominal Supply Voltage	V _{IN}	5	12	24	Vdc	-
Supply Voltage range	V _{IN-RNG}	5	÷	24	Vdc	-
Efficiency at full load	E _{FF}	> 95			%	-
Standby power absorption	P _{STBY}	< 0.5			W	-
PUSH-BUTTON (INPUT terminal)						
Input type	IN _{TYPE}	Dry contact			-	For Normally Open (N.O.) pushbutton
Maximum wiring distance	PB _{WD-max}	-	-	10	m	-
OUTPUT (OUT terminal)						
Output Voltage	V _{OUT}	= V _{IN}			-	-
Output Current (max)	I _{OUT-max}	-	-	7	A	-
Rated Power Output	P _{OUT}	@5V	@12V	@24V	W	Rated @T _A <35 °C.
		35	84	168		
Load type	L _{TYPE}	Digital-LED strip			-	Defined by design
IC LED type	IC _{TYPE_3CH}	WS2811, WS2812, WS2812B, WS2813B, WS2815, UCS1903, UCS1904, TM1804, TM1903, TM1913, GS8206, TX1818, SK6812, SM16703, APA105			-	3-channel Digital-LED. Check on Table 5 for other compatible ICs.
	IC _{TYPE_4CH}	WS2814, UCS2904, TM1814, SK6805, SK6812, SM16704, UCS7604			-	4-channel Digital-LED. Check on Table 5 for other compatible ICs.
Colour type map	CL _{TYPE_3CH}	RGB, RBG, GRB, GBR, BRG, BGR, WWW, TW(WWCW), TW(CWWW)			-	3-channel RGB/TW Digital-LED
	CL _{TYPE_4CH}	RGBW, RBGW, GRBW, GBRW, BRGW, BGRW, WRGB, WRBG, WGRB, WGBR, WBRG, WBGR			-	4-channel RGBW Digital-LED
Maximum addressable LEDs	IC _{ADDR_max}	-	-	2000	-	-
Resolution	RES	8			bit	16 million colours
Frame Rate	FR _{RGB}	100000 / (3 * Pixel Number)			-	RGB
	FR _{RGBW}	100000 / (4 * Pixel Number)			-	RGBW
BUS EXTENDER OUT (BUS terminal)						
BUS type	BUS _{TYPE}	RS485			-	DMX protocol compatible
Maximum wiring distance	BUS _{WD-max}	-	-	250	m	-
DALI BUS (DALI terminal)						
DALI Device Type	DT _{DALI}	DT6	or	DT8	-	-
DALI Power Supply	PS _{DALI}	External			-	DALI bus Power Supply is required
ENVIRONMENTAL						
Storage temperature	T _{STORE}	-40	÷	+60	°C	Minimum values defined by design
Working Ambient temperature	T _A	-10	÷	+60	°C	Minimum values defined by design
Max Temperature @T _c point	T _C	-	-	+80	°C	-
Connector Type	CON _{TYPE}	Push-in terminals			-	-
Wiring Section	WS _{SOLID}	0.5	÷	1.5	mm ²	Defined by design
	WS _{STRAND}	20	÷	16	AWG	
Strip length	WS _{STRIP}	10			mm	-
Protection class	IP _{CODE}	IP20			-	-
Enclosure Material	M _{CASE}	PC/ABS			-	Polycarbonate/ABS
Enclosure Fixing	F _{CASE}	Screw fixing slots			-	-
Packaging units (pieces/units)	PU	1			pcs	-
Dimensions	-	L	H	D	-	-
	MD	136	29	21	mm	Case
	PD	147	34	29	mm	Packaging
Weight	W	58			g	Including packaging

Table 4: Technical specification

Other compatible IC-LEDs	IC Type to select
WS2812C, WS2813, WS2813E, WS2815B, WS2818A	WS2815
WS2813C, WS2818B	WS2813B
UCS1909, UCS1912*, UCS2903	UCS1903
UCS2909, UCS2912*	UCS1904
UCS2904B*	UCS2904
TM1809, TM1812*	TM1804
TM1913, TM1923	TM1903
TM1926*	TM1913
WS2813B_4CH	WS2814
APA107, APA109	APA105
GS8208	GS8206
SK6808, SK6813	SK6812
* 4-Pixel per IC-LED	

Table 5: Compatible IC-LEDs

T_c POINT POSITION

The figure below shows the position of the maximum temperature point (T_c point, highlighted in red) reached by the electronics inside the enclosure. It is located on the front side (Top) near the BUS output terminal.

Figure 1: T_c point position

LIGHT EFFECTS AVAILABLE

RUNNING-LIGHT-V2 supports the following light animation of the pixel-to-pixel Digital-LED strip. The light effects are grouped as shown in the following Table.

	FILL	FILL PARTIAL	STATIC	RAINBOW	WAVE	PLASMA	FIRE	HORSE RACE	STATIC2
RGB	✓	✓	✓	✓	✓	✓	✓	✓	✓
RGBW	✓	✓	✓	✓	✓	✓	✓	✓	✓
TW	✓	✓	✓	-	✓	-	-	-	✓
W	✓	✓	✓	-	✓	-	-	-	✓

Table 6: Grouping for the available effects

For an effect preview, please visit <https://www.dalcnet.com/en/blog/dynamic-led-scenography-and-effects-with-running-light-dalcnet-n6>.

INSTALLATION



ATTENTION! Installation and maintenance must always be carried out in the absence of voltage.

Before proceeding with the connection of the device to the power supply, make sure that the voltage of the power source is disconnected from the system.



The device should only be connected and installed by qualified personnel. All applicable regulations, legislation, standards, and building codes must be adhered to. Incorrect installation of the device may cause irreparable damage to the device and connected loads.

The following paragraphs show the diagrams of the dimmer's connection to the remote control, the load and the supply voltage. It is recommended to follow these steps to install the product safely.

Since multiple operating modes are available, refer to the appropriate wiring depending on the type of operation you wish to achieve.

1. **Safety first:** ensure the DC Power Supply is disconnected from the Mains Voltage before starting the installation
2. **Load wiring:** connect the Digital-LED strip wires to the "OUT" terminal block, wiring the positive wire to the "V+" terminal, the negative wire to the "V-" terminal, and the Data-IN wire to the "DATA" terminal.
3. **Electrical connections:** up to 6 operating modes are available, please refer to the proper wiring instruction listed below.
 - *PUSH SYNCH* and *SYNCH SLAVE* control type: refer to §[SYNCH wiring](#).
 - *PUSH REPEATER* and *DALI REPEATER* control type: refer to §[REPEATER wiring](#).
 - *DMX TO SPI* and *DMX SMART MAP* control type: refer to §[DMX wiring](#).
4. **Power Supply wiring:** connect a 5 Vdc, 12 Vdc, or 24 Vdc constant voltage SELV power supply (depending on the nameplate data of the LED load) to the "+" and "-" terminals of the DC IN terminal.
5. **Check the connections:** verify that all connections are tightly secured and that there are no exposed wires.
6. **Final check:** reconnect the DC Power Supply to the Mains Voltage to power ON the device. Perform a test to ensure that the device is functioning correctly and that all connections are secure.

Note: the installer is responsible for verifying the installation.

DIGITAL-LED LOAD WIRING

RUNNING-LIGHT-V2 has one Digital-LED terminal that can drive a Digital-LED strip RGB, RGBW or TW up to 2000 pixel-to-pixel IC LEDs. The IC LED type, colour type, and the number of LED elements to be driven are configurable from Dalcnet LightApp. The following connection diagram (Figure 2) allows you to drive one Digital LED load.



Figure 2: Connection diagram for Digital LED loads

- For higher Load current ($> 7A$) it is recommended to use the following connection diagram, bypassing the V+ and V- signals of the OUT terminal and connecting the digital LED strip Supply Voltage terminals directly to the Power Supply.

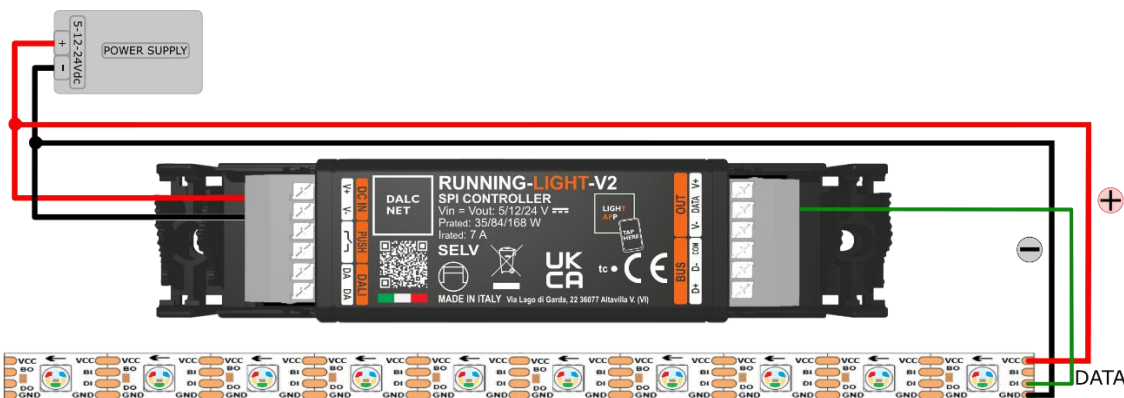


Figure 3: Connection diagram for Digital LED loads ($> 7A$)

SYNCH WIRING

It is possible to connect multiple RUNNING-LIGHT-V2 devices together in Master/Slave mode by connecting the local control (i.e. push button) to the dedicated terminals of the Master device, wiring the Master's "BUS" signals to the "BUS" terminal of the Slaves devices.

Before wiring, set the proper behaviour to the RUNNING-LIGHT-V2 devices by means Dalcnet LightApp configuration via NFC tap:

- Master mode: set the Control Type parameter to *PUSH SYNC*
- Slave mode: set the Control Type parameter to *SYNC SLAVE*

Following diagrams shows two different sync wiring configurations, depending to the sync cable used.

 **RUNNING-LIGHT-V2 devices can be powered by a single DC power supply or by a dedicated DC power supply for each device. In any case, make sure that the rating data of the power source(s) comply with the requirements listed in Table 4.**
The BUS terminal is a RS485 interface and requires 3-wire twisted pair shielded cable (recommended to improve signals immunity against environment electrical disturbances). 2-wire twisted pair shielded cable can be used too.

Keep the distances from the device to the unshielded portion of twisted pair as short as possible.

It is possible to configure Master & Slave system up to 10 total devices, with maximum cable length of 15m between each device.

DIAGRAM WITH 3-WIRE (TWISTED PAIR PLUS COMMON) SHIELDED CABLE

On 3-wire (twisted pair plus common) shielded cable, connect the common wire to the COM signal and the twisted pair to the D+ and D- signals on BUS terminals. The cable's shields shall be connected all together and to the Earth Ground at one end only. In case of 4-wire (twisted pairs) shielded cable, simply use one twisted pair for COM signal (with pair wires connected) and the other twisted pair for differential D+ and D- signals.

The following diagram is recommended for cabling path near disturbance sources (e.g. Mains grid, wireless router, etc.) and in general to improve disturbance immunity at BUS side.

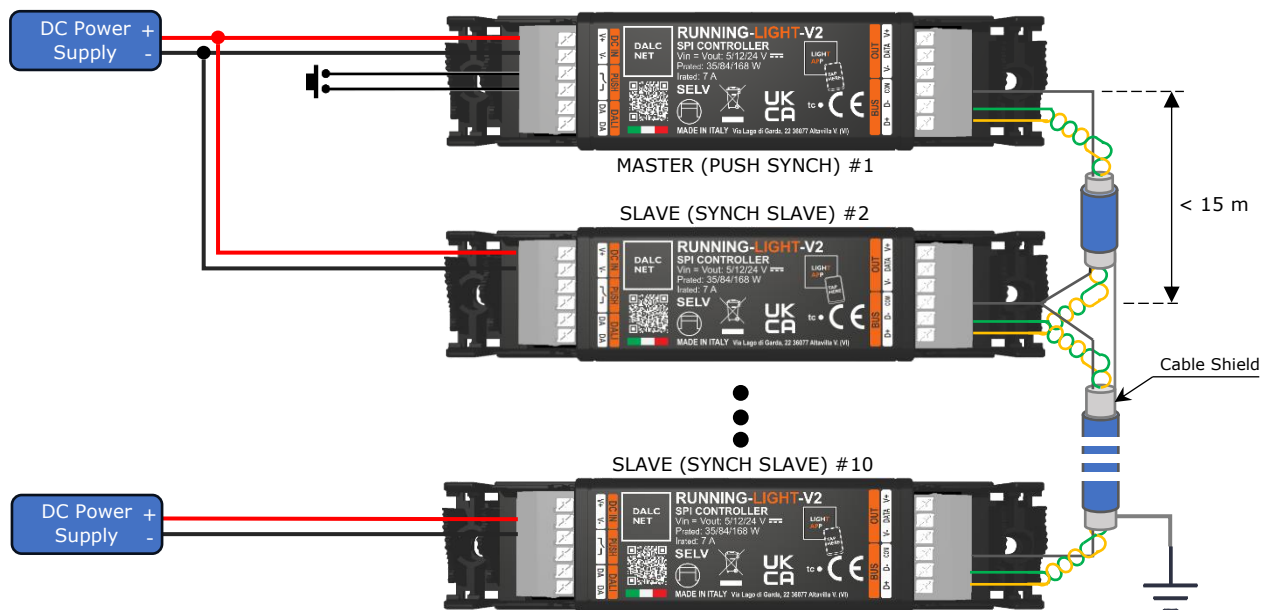


Figure 4: Sync wiring diagram with 3-wire shielded cable

DIAGRAM WITH 2-WIRE (TWISTED PAIR) SHIELDED CABLE

In case of twisted pair shielded cable (no Common wire) connecting the RUNNING-LIGHT-V2 devices, wire the COM signals to the cable's shield and the twisted pair to the D+ and D- signals on BUS terminals.

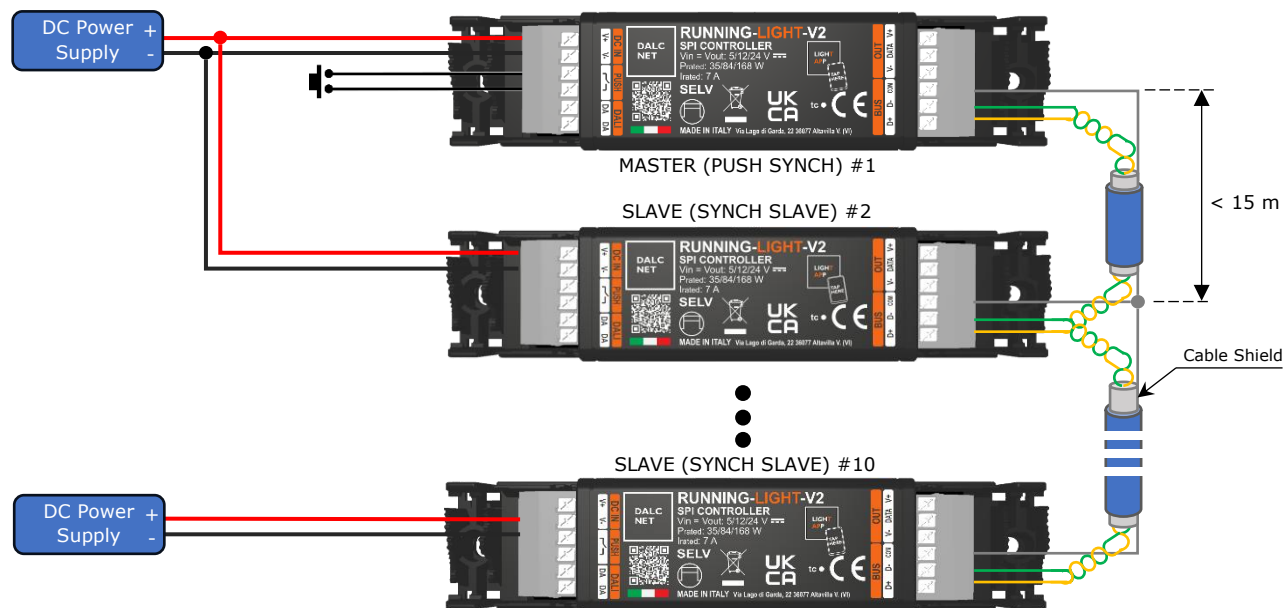


Figure 5: Sync wiring diagram with 2-wire shielded cable

REPEATER WIRING

Optionally, you can duplicate the effects on a second Digital-LED strip distant up to 250 m from the RUNNING-LIGHT-V2 controller using the PIXEL-REPEATER module (sold separately).

The effects to both Digital-LED strips can be controlled directly from the RUNNING-LIGHT-V2 device, previously set via LightApp depending on the type of control desired:

- **Pushbutton control:** set the Control Type parameter to *PUSH REPEATER*
- **DALI control:** set the Control Type parameter to *DALI REPEATER*

The following paragraphs show the diagrams of the PIXEL-REPEATER BUS connection to the RUNNING-LIGHT-V2 controller, the load and the supply wirings. It is recommended to follow these steps to install the product safely:

1. **Load wiring:** connect the Digital-LED strip signal to the "OUT" terminal, the power supply positive wire to the "V+" symbol, the negative wire to the "V-" symbol, and the Data-IN wire to the "DATA" symbol.
2. **BUS wiring:** connect the RUNNING-LIGHT-V2 BUS signals to the "BUS" terminal using one twisted-pair shielded cable, wiring the D+ (Data-B) signal to the "D+" symbol, the D- (Data-A) to the "D-" symbol, and the COM (Common) signal to one of the "V-" terminals through the cable shield (recommended for signal balancing).
3. **Power Supply wiring:** connect a 5 Vdc, 12 Vdc, 24 Vdc or 48Vdc constant voltage SELV power supply (depending on the nameplate data of the LED load) to the "V+" and "V-" terminals of the DC IN terminal.



PIXEL-REPEATER device can be powered by a dedicated VDC power supply. Make sure that the rating data of the power source comply with the nameplate of module/Digital-LED strip.

BUS terminal is a RS485 interface and one twisted-pair shielded cable shall be used. RS485 shielded cable can be used too. Keep the distances from the device to the unshielded portion of twisted pair as short as possible.

Only one control at a time, Pushbutton or DALI, will be operational depending on the Control Type selected via LightApp.

In case of one twisted-pair shielded cable (no Common wire), wire the twisted pair to the D+ and D- signals on BUS terminals. The COM signal can be connected to any "V-" terminal of the PIXEL-REPEATER device using the cable shield to improve the signal balance on the BUS.

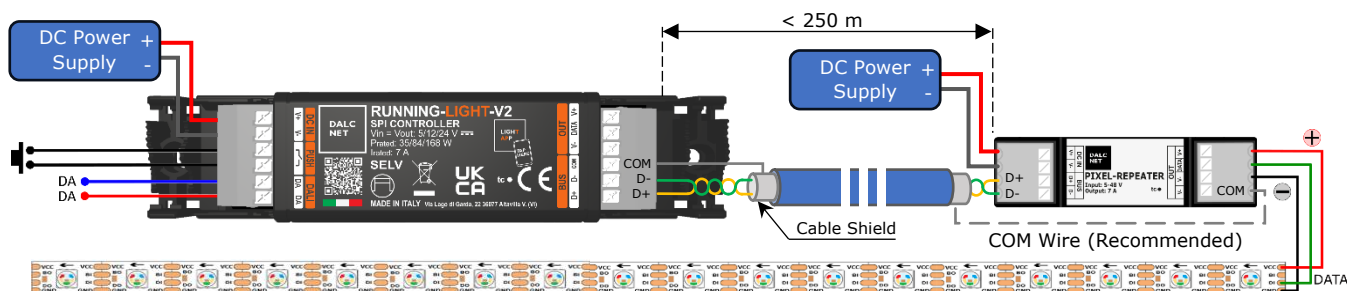
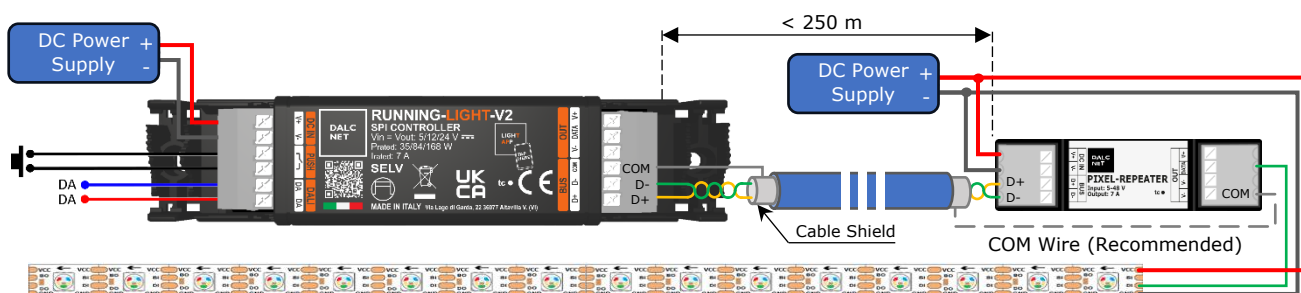


Figure 6: PIXEL-REPEATER wiring diagram

⚡ For higher Load current ($> 7A$) it is recommended to use the following connection diagram, bypassing the V+ and V- signals of the OUT terminal and connecting the Digital-LED strip Supply Voltage terminals directly to the Power Supply.

Figure 7: PIXEL-REPEATER wiring diagram ($> 7A$)

DMX WIRING

With dedicated control type selection, the RUNNING-LIGHT-V2 and the Digital-LED strip connected can be controlled via DMX512 bus, using the BUS terminal as control bus with an external DMX Master.

Using the DMX bus, two operating modes are available by setting the Control Type parameter value:

- **DMX to SPI** Control Type: the RUNNING-LIGHT-V2 works as DMX to SPI converter. Depending on the number of channels available on the IC-LED (3-channels for RGB, 4-channels for RGBW), each DMX channel controls a colour channel on the IC-LED.
- **DMX SMART MAP** Control Type: all the effect parameters are mapped over up to 13 DMX addresses to set the effect on the Digital-LED. Up to four maps are available (RGB, RGBW, TW, and W).

The following paragraph shows the wiring diagram of the RUNNING-LIGHT-V2 to be used with DMX control operating mode.

✂ *RUNNING-LIGHT-V2 can communicate over DMX digital bus by means of a three-wire, twisted and shielded cable, with a nominal impedance of 110Ω .*

To connect RUNNING-LIGHT-V2 to the DMX network, simply connect the bus cables to the terminals of the "BUS" terminal block: since no other topologies other than Bus-wiring are possible, the polarity of the "COM", "D+" and "D-" signals must be respected during connection.

Keep the distances from the device to the unshielded portion of twisted pair as short as possible.

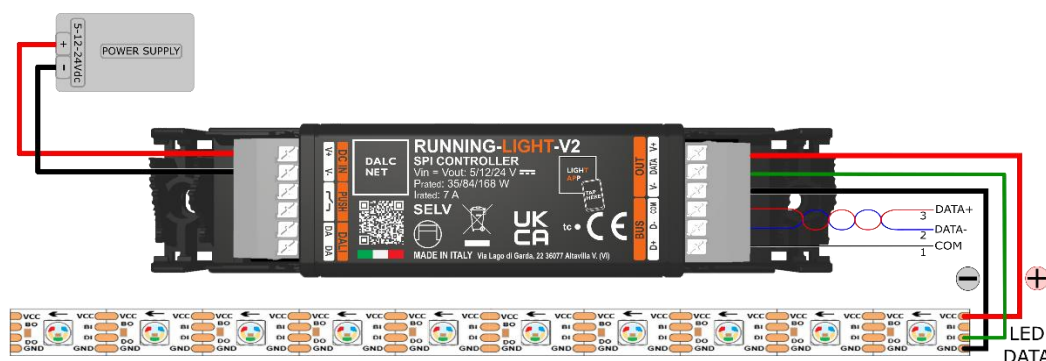


Figure 8: DMX bus wiring diagram

LOCAL CONTROL WIRING

RUNNING-LIGHT-V2 can be controlled via Local Control with one Normally Open (N.O.) pushbutton or voltage-free dry contact. No other voltage signals shall be applied to these contacts.

 To connect the RUNNING-LIGHT-V2 to local control, simply connect the pushbutton to the INPUT terminal. The following image shows the indicated wiring diagram for short distances (<10 m).



Figure 9: Local Control wiring diagram for Short Distances

 For longer distances (>10 m), it is recommended to use an N.O. dry contact relay module, connected between the "Input" terminal of the RUNNING-LIGHT-V2 and the power source (e.g. mains voltage 230 Vac). Following figure shows an example of a Local Command wiring recommended for long distances.

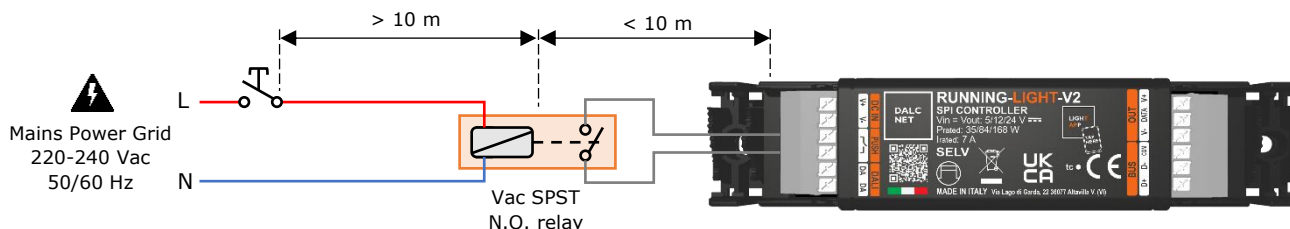


Figure 10: Local Command wiring diagram for Long Distances

REMOTE CONTROLS WIRING TOPOLOGIES

RUNNING-LIGHT-V2 can be controlled remotely via DALI digital bus by means of a simple two-wire cable (untwisted and unshielded) or via DMX512 digital bus by means of a three-wire cable (twisted and shielded), with a nominal impedance of 110 Ω. In both cases, the control is carried out by means of a Master (DALI or DMX), which provides commands to the devices in the network and, if necessary, in case of DALI network, the power supply⁴ to the network itself.

DALI WIRING AND TOPOLOGIES

 To connect RUNNING-LIGHT-V2 to the DALI network, simply connect the bus cables to the "DA" terminals of the "DALI" terminal: as different topologies are possible, it is not necessary to observe the polarity of the "DA+" and "DA-" signals of the bus when connecting.

Note that DALI remote control works only if the Control Type "DALI REPEATER" is configured on the RUNNING-LIGHT-V2 device.

The DALI protocol supports several wiring topologies, i.e. Bus-wiring, shown as an example in Figure 11.

⁴ The bus power supply can be supplied by an external 16 Vdc power supply (or within the range of 12 ÷ 20 Vdc) or by a DALI Master with integrated bus power supply (e.g. DGM02-1248 shown in Figure 11). For more information, please visit our website: www.dalcnet.com.

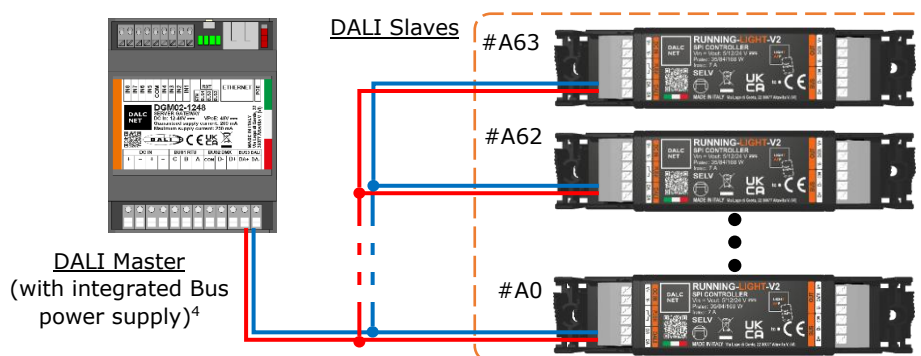


Figure 11: Remote Control Connection Topology, Bus-wiring

The DALI protocol supports up to 64 Control Gear slave devices (e.g. RUNNING-LIGHT-V2) connected with different wiring topologies shown in Figure 12: Bus-wiring, Star-wiring, Tree-wiring, or Line-wiring. Other topologies are excluded.

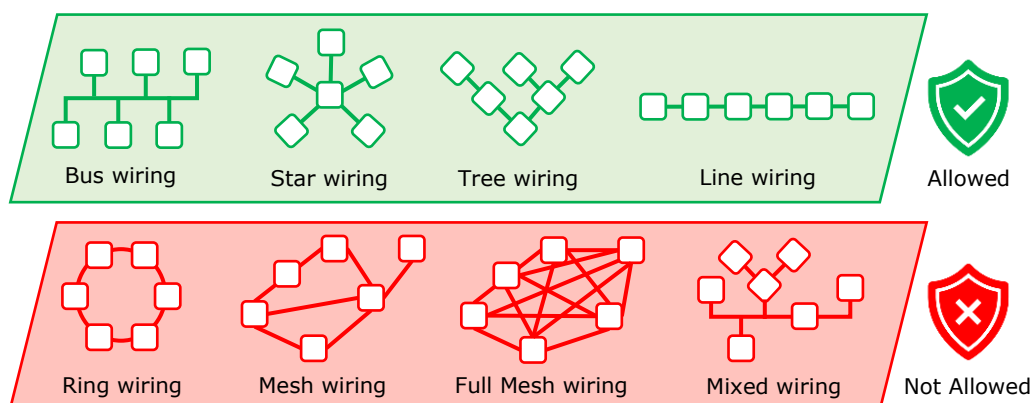


Figure 12: DALI wiring Topologies

DMX WIRING AND TOPOLOGY

 To connect RUNNING-LIGHT-V2 to the DMX network, simply connect the bus cables to the terminals of the "BUS" terminal block: since no other topologies other than Bus-wiring are possible, the polarity of the "COM", "D+" and "D-" signals must be respected during connection.

Note that DMX remote control works only if the Control Type "DMX TO SPI" or "DMX SMART MAP" is configured on the RUNNING-LIGHT-V2 device.

The most commonly used connectors are 3 and 5 pole XLR, where one pin is the cable shield (ground) and 2 pins are used for DMX signal transmission. In the case of 5-pole XLR, the other 2 pins are reserved for a secondary DMX balanced line⁵.

Signal Description	Pin# (3-Pin XLR)	Pin# (5-Pin XLR)	DMX Function
Common Reference	1	1	Data-Link Common
Primary Data-Link	2	2	Data 1-
	3	3	Data 1+
Secondary Data-Link ⁵	-	4	Data 2-
	-	5	Data 2+

Table 7: Three and Five pin XLR connector pinouts

⁵ Optional, refer to chapter §4.8 of ANSI E1.11.

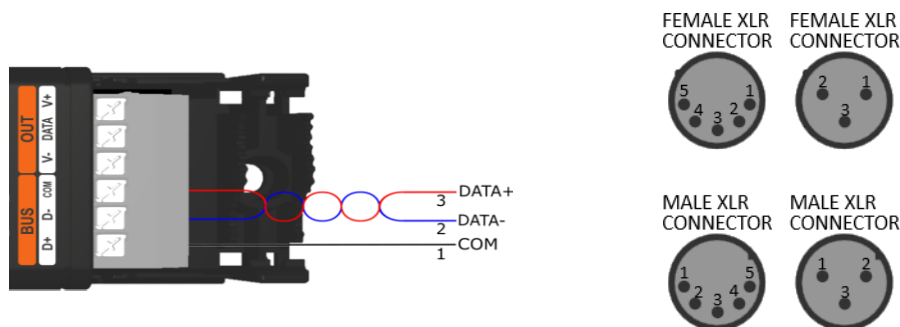


Figure 13: Bus Connection Pin-out and XLR Connectors

DMX protocol requires a single wiring topology, Bus-wiring, which is shown as example in the following figure.

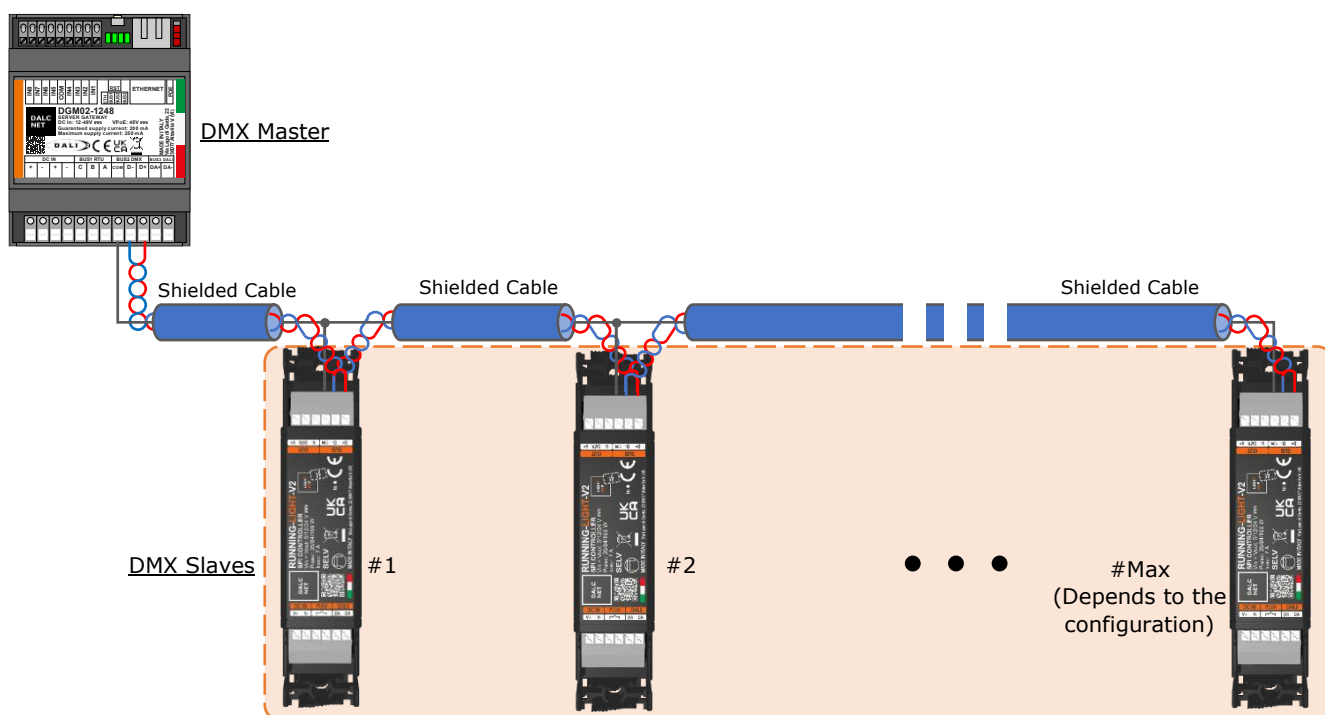


Figure 14: Remote Control Bus-wiring Topology

POWER SUPPLY CONNECTION

 RUNNING-LIGHT-V2 can be powered by a 5 Vdc, 12 Vdc or 24 Vdc constant voltage SELV power supply, depending on the operating voltage of the LED load. Once all above connections are performed, connect the power supply to the "+" and "-" terminals of the DC IN terminal.



Figure 15: Power Supply Connection Diagram

LOCAL CONTROL FUNCTIONALITY: PUSHBUTTON

RUNNING-LIGHT-V2 has one terminal for N.O. pushbutton or dry contact input, through which different operating parameters can be managed. Each action on the pushbuttons activates a specific function for the Effect selected via LightApp mobile app.

PUSHBUTTON FUNCTIONALITIES FOR "STATIC", "FILL", "WAVE", "RAINBOW", AND "FIRE" EFFECTS

Following table depicts the pushbutton functionalities for the following effects: Static, Fill, Wave, Rainbow, and Fire.

ACTION	FUNCTION
 Quick push	ON/OFF of the LED module.
 Long push	Brightness adjustment (Dimming)
 Triple quick push	Change the effect ⁶ . The Effect list can be configured from LightApp mobile app.

Table 8: Pushbutton functionality for "STATIC", "FILL", "WAVE", "RAINBOW", and "FIRE" effects

PUSHBUTTON FUNCTIONALITIES FOR "FILL PARTIAL" EFFECT

In *Fill Partial* effect, the pushbuttons take over ON/OFF control functions, to adjust the brightness and to set the Partial sector length.

ACTION	FUNCTION
 Quick push	ON/OFF of the LED module. Stop the Fill effect on the configured Partial sector.
 Double quick push	Start the Fill effect on the configured Partial sector.
 Long push (> 1s) from ON	Brightness adjustment (Dimming).
 Long push (> 1s) from OFF	Configure the Partial Sector on the LED strip. LEDs starts to power ON one at a time to create the Partial sector on the LED strip.
 Triple quick push	Change the effect ⁶ . The effect list can be configured from LightApp mobile app.

Table 9: Pushbutton functionality for "FILL PARTIAL" effect

⁶ Available only with PUSH Effect change mode selected on LightApp® mobile app, refer to **§Errore. L'origine riferimento non è stata trovata.** section of this manual.

PUSHBUTTON FUNCTIONALITIES FOR "HORSE RACE" AND "PLASMA" EFFECTS

In *Horse Race* and *Plasma* effect, the pushbuttons take over the Start (ON)/OFF the Horse/Plasma sector.

ACTION		FUNCTION
	Quick push	Start (ON)/OFF of the Horse/Plasma sector on LED module. The background intensity remains unchanged.
	Triple quick push	

Table 10: Pushbutton functionality for "HORSE RACE" and "PLASMA" effects

PUSHBUTTON FUNCTIONALITY FOR "RANDOM" EFFECT

In *Random* effect, the pushbuttons take over Start/Stop the effect.

ACTION		FUNCTION
	Quick push	Start/Stop of the effect on LED module.
	Triple quick push	

Table 11: Pushbutton functionality for "RANDOM" effect

THERMAL CHARACTERIZATION

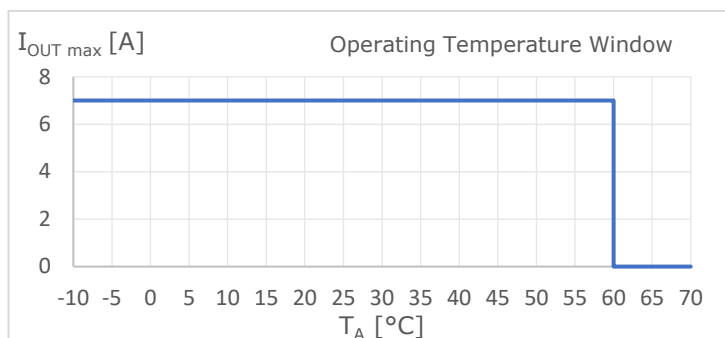


Figure 16: Operating Temperature Window

Figure 16 shows the maximum output current values that can be provided by the RUNNING-LIGHT-V2 as a function of the operating temperature⁷ (or ambient temperature, T_A) of the operation, summarized below:

$$\diamond \quad T_A = (-10 \div +60) \text{ } ^\circ\text{C} \quad \rightarrow \quad I_{OUT} \leq 7 \text{ A}$$

These maximum current (total) values can only be applied under proper ventilation conditions.

MECHANICAL DIMENSIONS

Figure 17 details the mechanical measurements and the overall dimensions [mm] of the outer casing.

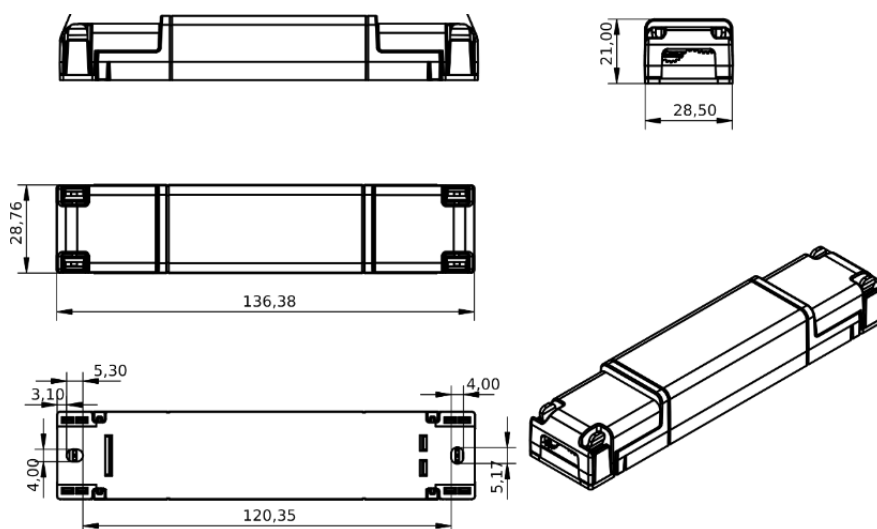


Figure 17: Mechanical dimensions

⁷ If the product is installed inside an electrical panel and/or junction box, T_A refers to the temperature inside the panel/box.

TECHNICAL NOTES

INSTALLATION

 **ATTENTION!** Installation and maintenance should always be carried out in the absence of DC voltage. Before proceeding with the installation, adjustment, and connection of the device to the power supply, make sure that the voltage is disconnected from the system.

 The device should only be connected and installed by qualified personnel. All applicable regulations, legislation, standards, and building codes in force in the respective countries must be adhered to. Incorrect installation of the device may cause irreparable damage to the device and connected loads.

Maintenance must only be carried out by qualified personnel in compliance with current regulations.

The product must be installed inside an electrical panel and/or junction box that is protected against surges/overvoltage.

The product is suitable for use in dry places, away from sources of moisture. Installation and use must take place in a dry environment.

The external power supply must be protected. The product must be protected by a properly sized circuit breaker with overcurrent protection.

Keep 230 Vac (LV) circuits and non-SELV circuits separate from SELV safety ultra-low voltage circuits and any product connections. It is strictly forbidden to connect, for any reason, directly or indirectly, the 230 Vac mains voltage to the product (control terminals included).

The product must be installed in a vertical or horizontal position, i.e. with the faceplate/label/top cover facing up or vertically. No other positions are allowed. The bottom position, i.e. with the faceplate/label/top cover facing downwards, is not allowed.

During installation, it is recommended to reserve adequate space around the device to facilitate its accessibility in case of future maintenance or updates (e.g. via smartphone).

 Use in thermally harsh environments may limit the output power of the product.

For devices embedded within luminaires, the T_A ambient temperature range is a guideline to be carefully observed for the optimal operating environment. However, the integration of the device within the luminaire must always ensure proper thermal management (e.g. correct mounting of the device, proper ventilation, etc.) so that the temperature at the T_C point does not exceed its maximum limit under any circumstances. Proper operation and durability are only guaranteed if the maximum temperature of the T_C point is not exceeded under the conditions of use.

POWER SUPPLY AND LOAD

 The device must be powered only with SELV power supplies with limited current at constant voltage, short-circuit protection and suitably sized power according to the specifications indicated in the product data sheet. No other types of power supply are permitted.

Size the power of the power supply respect to the load connected to the device. If the power supply is oversized compared to the maximum current drawn, insert an overcurrent protection between the power supply and the device.

Connecting to an unsuitable power supply may cause the device to operate outside of the specified design limits, voiding its warranty.

In the case of power supplies equipped with earth terminals, it is mandatory to connect ALL the protection earth points (PE= Protection Earth) to a state-of-the-art and certified earthing system.

The power cables of the device must be correctly sized with reference to the connected load and must be isolated from any wiring or equal to non-SELV voltage. It is recommended not to exceed 10m of connection between the power source and the product. Use double-insulated cables. If you want to use connection cables between the power source and the product longer than 10m, the installer must ensure the correct operation of the system. In any case, the connection between the power supply and the product must not exceed 30m.

The manufacturer recommends ensuring a cumulative leakage current of less than 3.5 mA on the control circuit.

 The device has been designed to work with Digital-LED loads only. Connecting and powering unsuitable loads may cause the device to operate outside of the specified design limits, voiding its warranty. In general, the operating conditions of the device should never exceed the specifications indicated in the product data sheet.

Observe the intended polarity between the LED module and the device. Any polarity reversal results in no light emission and can often damage the LED modules.

It is recommended that the connection cables between the product and the LED module be less than 3m long. Cables must be properly sized and should be insulated from any non-SELV wiring or parts. It is recommended to use double-insulated cables. If you want to use connection cables between the product and the LED module longer than 3m, the installer must ensure the correct operation of the system. In any case, the connection between the product and the LED module must not exceed 30m.

It is not allowed to connect different types of loads in the same output channel.

LOCAL CONTROL AND BUS

 The length of the connection cables between the local control (N.O. pushbutton) and the product must be less than 10m. For longer lengths, we recommend the use of an N.O. Dry Contact Relay module, connected between the "Input" terminal of the device (dry contact side of the relay) and the power source (coil side of the relay) as shown in the connection example in Figure 5. The cables must be sized correctly. Depending on the connection used, they must be isolated from any wiring or non-SELV voltage parts. It is recommended to use double-insulated cables, if deemed appropriate, also shielded.

All devices and control signals connected to local commands with the symbol  , must not supply any type of voltage.

 The length and type of cables connecting to the buses must comply with the specifications of the respective protocols and current regulations. They must be isolated from any non-SELV wiring or live parts. It is recommended to use double-insulated cables.

The length and type of the connection cables at the extension BUS must be less than 250m and they should be isolated from every wiring or parts at voltage not SELV. To improve voltage balance at BUS side, the double insulated twisted-pair shielded cables shall be used, with shield connected to the COM signal of BUS interface and to the COM signal of PIXEL-REPEATER.

NFC (NEAR FIELD COMMUNICATION) WARNINGS



The NFC antenna is located inside the device, the contact surface of which is indicated with the symbol . Position your smartphone so that its NFC antenna is in contact with the symbol on the device.

The location of the NFC sensor on the smartphone is dependent on the make and model of the smartphone itself. Therefore, it is recommended to refer to your smartphone's manual or the manufacturer's website to accurately determine where the NFC sensor is located. In most cases, the NFC reader is located on the back side near the top of the smartphone.

NFC technology works optimally with non-metallic materials. Therefore, it is not recommended to place the device near metal objects or reflective surfaces when using NFC.

For reliable communication, make sure that the contact surface is not covered or that it is free of metal objects, wiring, or other electronic devices. Any impediments could affect the quality of communication.

NFC technology works at a short distance, generally within a few centimeters. Make sure your device and smartphone are close enough to allow communication.

During firmware update and configuration, you should maintain stable contact (possibly without movement) between your smartphone and the device for the entire duration of the process (typically between 3 and 60 seconds). This ensures that the update goes smoothly and that the device is ready to use after the process is complete.

LEGAL NOTES

TERMS OF USE



Dalcnet Srl (hereinafter referred to as "the Company") reserves the right to make changes to this device, in whole or in part, without prior notice to the customer. Such changes may affect technical aspects, functionality, design, or any other element of the device. The company is not required to notify you of such changes and that your continued use of the device will constitute your acceptance of the changes.

The company is committed to ensuring that any changes do not compromise the essential functionality of the device and that they comply with applicable laws and regulations. In the event of substantial changes, the company undertakes to provide clear and timely information on the same.

The customer is advised to periodically consult the www.dalcnet.com website or other official sources to check for any updates or changes to the device.

SYMBOLS

	All products are manufactured in compliance with European Regulations, as reported in the Declaration of Conformity.
	All products are manufactured in compliance with UK Regulations and conform to UK safety, health, and environmental requirements for products sold in the UK, as reported in the UK Conformity Assessed.
	Independent lamp Controlgear: lamp controlgear consisting of one or more separate elements so designed that it can be mounted separately outside a luminaire, with protection according to the marking of the lamp controlgear and without any additional enclosure.
SELV	"Very Low Safety Voltage" in a circuit isolated from the mains supply by insulation not less than that between the primary and secondary circuits of a safety isolation transformer according to IEC 61558-2-6.
	At the end of its useful life, the product described in this data sheet is classified as waste from electronic equipment and cannot be disposed of as unsorted municipal solid waste. Warning! Improper disposal of the product may cause serious harm to the environment and human health. For proper disposal, inquire about the collection and treatment methods provided by the local authorities.

Table 12: Device's symbols